October 11, 2002

MEMORANDUM TO: William H. Ruland, Director ***/RA/***
Project Directorate IV
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

FROM: Brian Benney, Project Manager, Section 2
Project Directorate IV
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

SUBJECT: SUMMARY OF MEETING HELD ON SEPTEMBER 25, 2002, WITH THE WESTINGHOUSE OWNERS GROUP

On September 25, 2002, the NRC staff held a public meeting with the Westinghouse Owners Group (WOG) at the NRC Headquarters in Rockville, Maryland. The purpose of the meeting was to discuss risk-informed inspections (WCAP-14572, Rev. 1-NP-A, Addendum 1 markup). In addition, other risk-informed initiatives were discussed.

The Westinghouse Owners Group (WOG) reported that a sample or "pilot" application on the extension of the WCAP risk-informed in-service inspection (RI-ISI) methodology to the break exclusion region (BER) has been completed at Beaver Valley. The WOG provided slides summarizing the results of the pilot application. The staff asked when the sample or pilot application would be submitted. The WOG agreed to submit more information on the Beaver Valley evaluation and requested that the staff identify the information to be submitted. The staff agreed to identify the requested information.

There was a discussion on the indirect consequences evaluation. The staff noted that the criteria of indirect effects assessment are described in WCAP-14572, Revision 1-NP-A, Section 3.4.2 and in the Addendum 1, Markup Section 3.2. Both documents state that the evaluation of pipe whip and jet impingement is performed using the guidance consistent with Westinghouse Systems Standard Design Criteria 1.19, WCAP-8951, U.S. NRC MEB 3-1 and ANSI/ANS-58.2. The WOG stated that in some cases, equipment that original WCAP methodology would normally assume fails due to the harsh environment because of its proximity to the pipe rupture, but whose environmental qualification envelope was not exceeded by the pipe failure, were not assumed to fail in the BER analysis. The staff recommended that the report include a discussion that would allow a licensee to also use the Final Safety Analysis Report criteria for evaluating the jet impingement and pipe whip effects that were approved by the staff.

There was extensive discussion on the application of the WCAP methodology to the population of the 72 BER segments in isolation versus application to the total population of 933 segments (16 BER pipe segments plus the 917 RI-ISI program scope segments). Fifty-six BER segments are also in the RI-ISI program scope. The WCAP methodology is a relative ranking methodology where the importance of individual segments is determined by the segment's

estimated risk contribution relative to the total estimated risk. Eight high safety significance (HSS) segments in the BER population were not assigned the HSS category based on the quantitative probabilistic risk analysis (PRA) evaluation but instead, had been assigned HSS by the expert panel. The WOG reported that, although they did not develop the precise estimates, if the 72 BER segments had been evaluated as a separate population, about 50 percent of the segments' risk reduction worths would probably have exceeded the guideline values and been placed in the HSS category. This would have most likely resulted in about 36 welds, or 15 percent, of the BER weld population requiring inspection.

The WOG stated that their position was that population of the BER segments should be evaluated as part of the total population of segments and not as a separate population. The staff stated that the high energy line break (HELB) program had been excluded from the original RI-ISI program scope because of the lack of pipe rupture mitigating features in the region, the congested nature of equipment in the region that comprise the interface between the equipment inside and outside of containment, the relatively high potential for degrading the ability to isolate containment if equipment in that area was failed, and the large and un-quantified uncertainties in the pipe failure frequency and the other PRA estimates. The staff stated that the intent of extending the RI-ISI methodology into the BER piping was to risk-inform the number of welds requiring examination while maintaining a substantive ongoing assessment of piping condition and not to discontinue the HELB inspection program. The staff also noted that during the September 19, 2001, meeting with the WOG, we had requested that the pilot application include evaluating BER piping separately from the rest of the RI-ISI piping population. The WOG reported that the Expert Panel had selected eight segments for inspection even though the quantitative PRA results did not require inspections and, therefore, there were still some inspections to be performed in the BER piping.

Although the results from the Beaver Valley pilot do not prove that application of the methodology to the entire population of segments would always result in no segments being placed in HSS based on the quantitative PRA results, the staff indicated that the Beaver Valley results were not unexpected given the relative ranking methodology. The staff further indicated that dependence on the expert panel to place some BER segments in the ISI program regardless of the quantitative PRA results would not provide the regulatory assurance needed for an appropriate level of inspections of this piping category. The staff requested that the WOG propose a methodology that would ensure that some inspections would be retained in the BER piping. The WOG indicated they would consider the request and would provide a response with the pilot submittal.

The WOG concluded by requesting that the safety evaluation for the expansion of the methodology be completed by December 2002. The staff indicated that the December 2002 date for the SE was unrealistic. The staff noted that the WOG had not yet provided the pilot information requested in earlier correspondence and meetings and noted that the issue of how to apply the methodology to the different populations could be a difficult issue. The meeting slides are available in ADAMS (Accession No. ML022760399).

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Attachment: Meeting Attendees

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Meeting Notice: ML022560191

Handout: ML022760399

ADAMS Accession No.: ML022810654

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ATTENDANCE LIST

WESTINHOUSE OWNERS GOUP (WOG)/NRC MEETING

SEPTEMBER 25, 2002

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P. Kotwicki

FENOC

D. Weakland
D. Grabski

NRC

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E. Sullivan
U. Li
S. Dinsmore
A. Keim
S. Ali